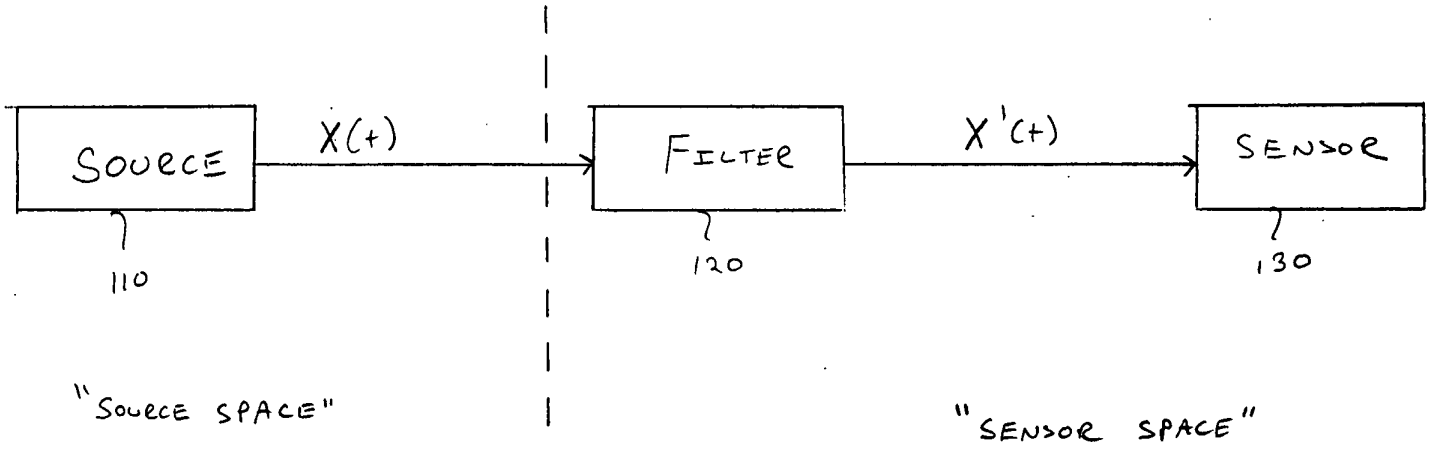

FIG. 1

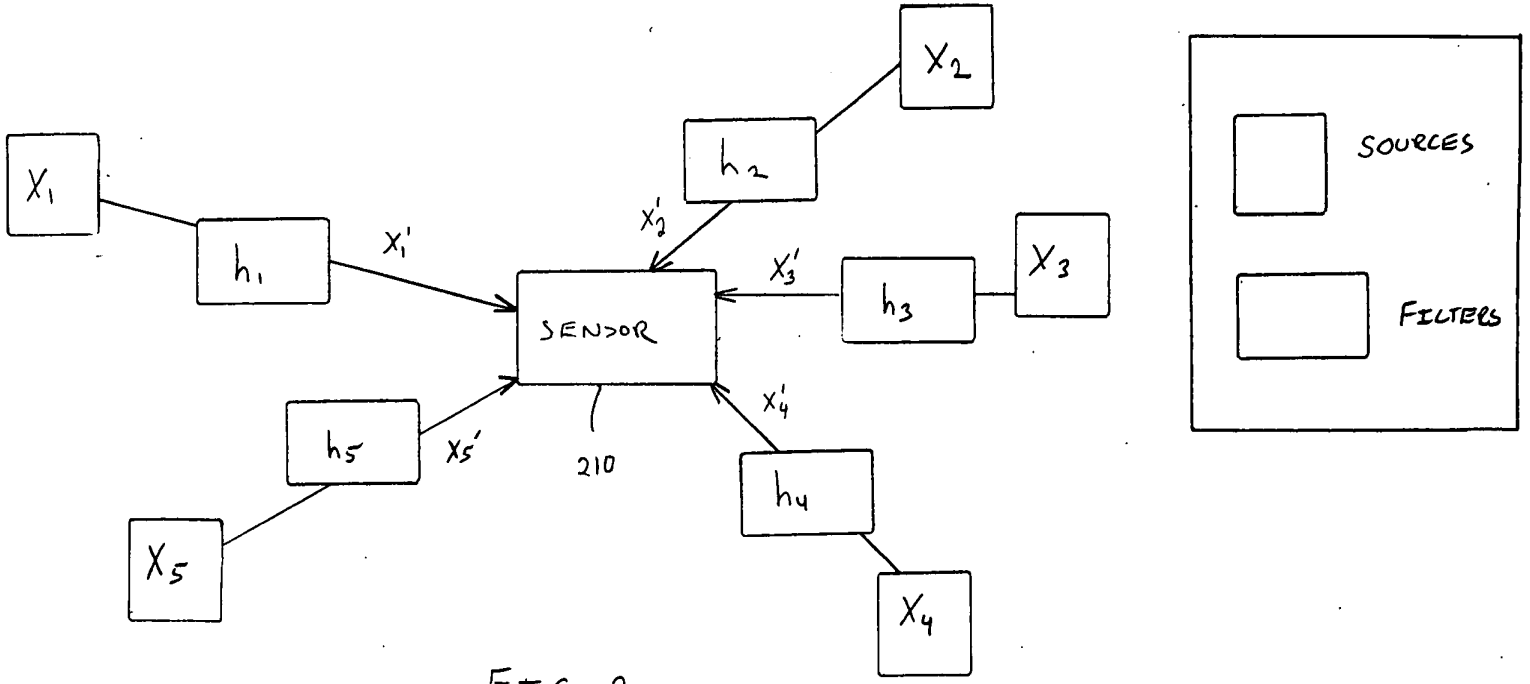

FIG. 2

Express Mail No.
EV 132191321 US

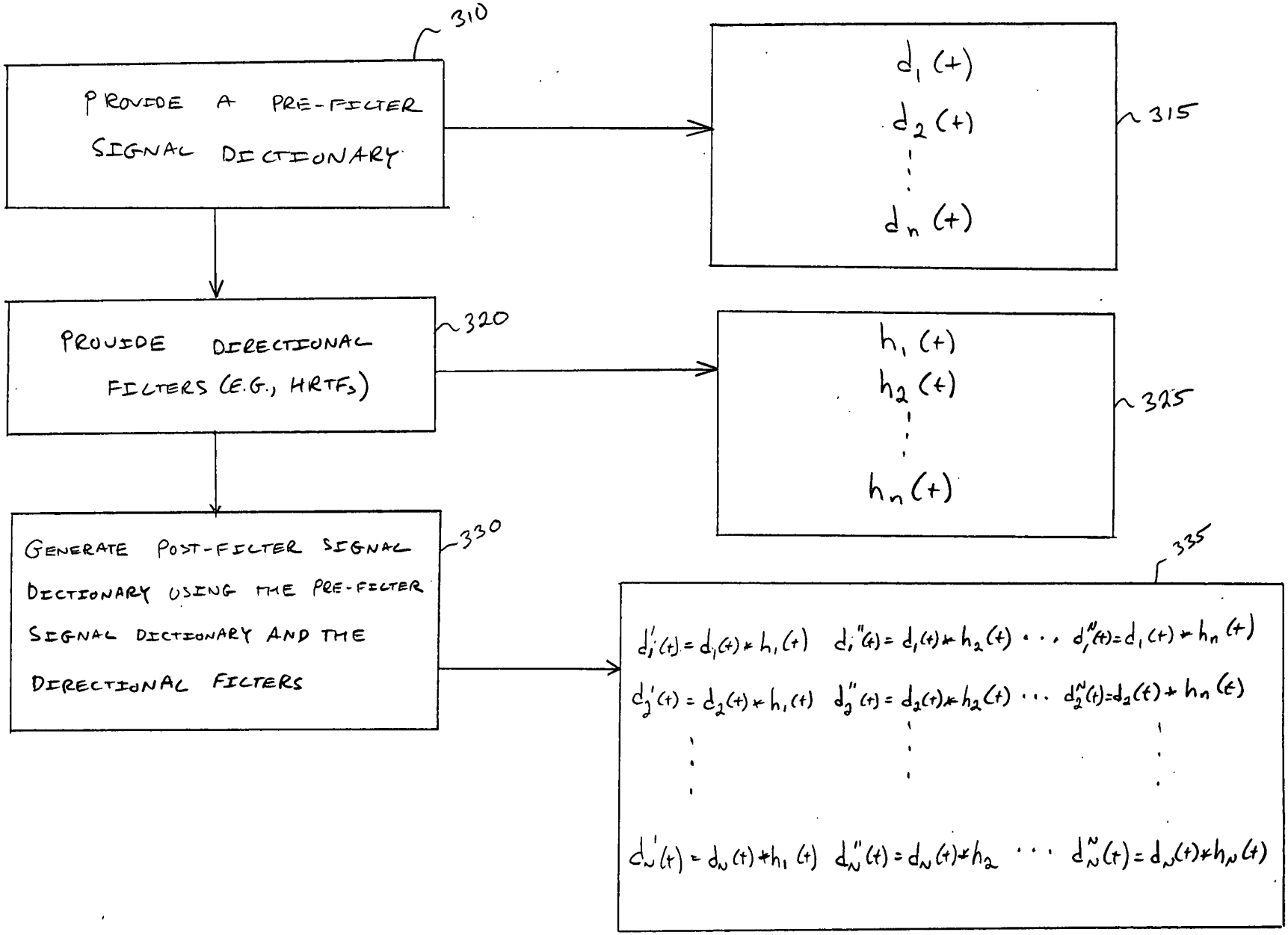
310
PROVIDE A PRE-FILTER SIGNAL DICTIONARY
$d_1(t)$
$d_2(t)$
$d_n(t)$
315
PROVIDE DIRECTIONAL FILTERS (E.G., HRTFs)
320
$h_1(t)$
$h_2(t)$
$h_n(t)$
325
GENERATE POST-FILTER SIGNAL DICTIONARY USING THE PRE-FILTER SIGNAL DICTIONARY AND THE DIRECTIONAL FILTERS
330
335
$d_1'(t) = d_1(t) * h_1(t)$ $d_1''(t) = d_1(t) * h_2(t)$ ... $d_1^N(t) = d_1(t) * h_n(t)$
$d_2'(t) = d_2(t) * h_1(t)$ $d_2''(t) = d_2(t) * h_2(t)$ ... $d_2^N(t) = d_2(t) * h_n(t)$
$d_N'(t) = d_N(t) * h_1(t)$ $d_N''(t) = d_N(t) * h_2$ ... $d_N^N(t) = d_N(t) * h_N(t)$

FIG. 3

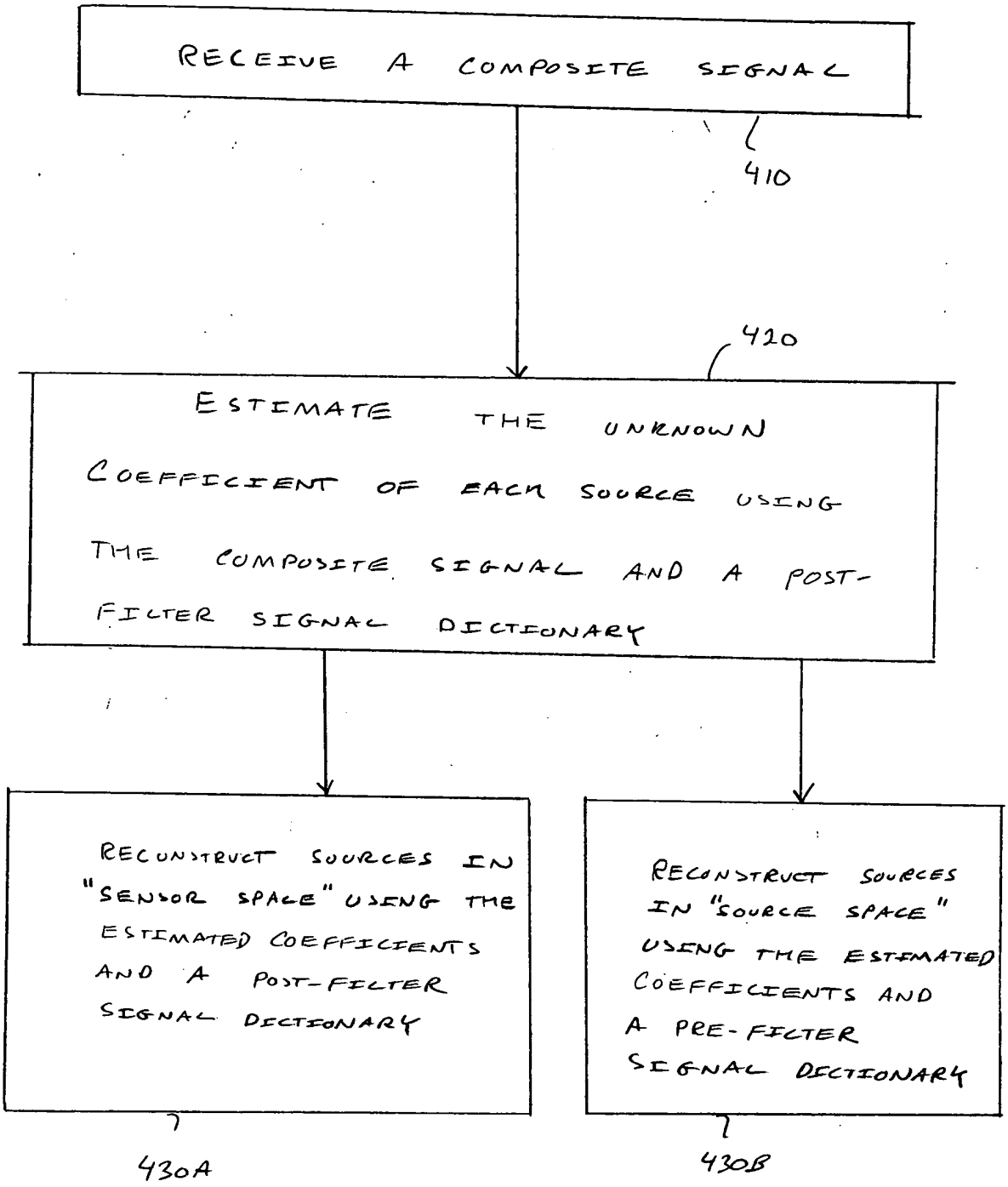
RECEIVE A COMPOSITE SIGNAL
410
420
ESTIMATE THE UNKNOWN COEFFICIENT OF EACH SOURCE USING THE COMPOSITE SIGNAL AND A POST-FILTER SIGNAL DICTIONARY
RECONSTRUCT SOURCES IN "SENSOR SPACE" USING THE ESTIMATED COEFFICIENTS AND A POST-FILTER SIGNAL DICTIONARY
RECONSTRUCT SOURCES IN "SOURCE SPACE" USING THE ESTIMATED COEFFICIENTS AND A PRE-FILTER SIGNAL DICTIONARY
430A
430B

FIG 4

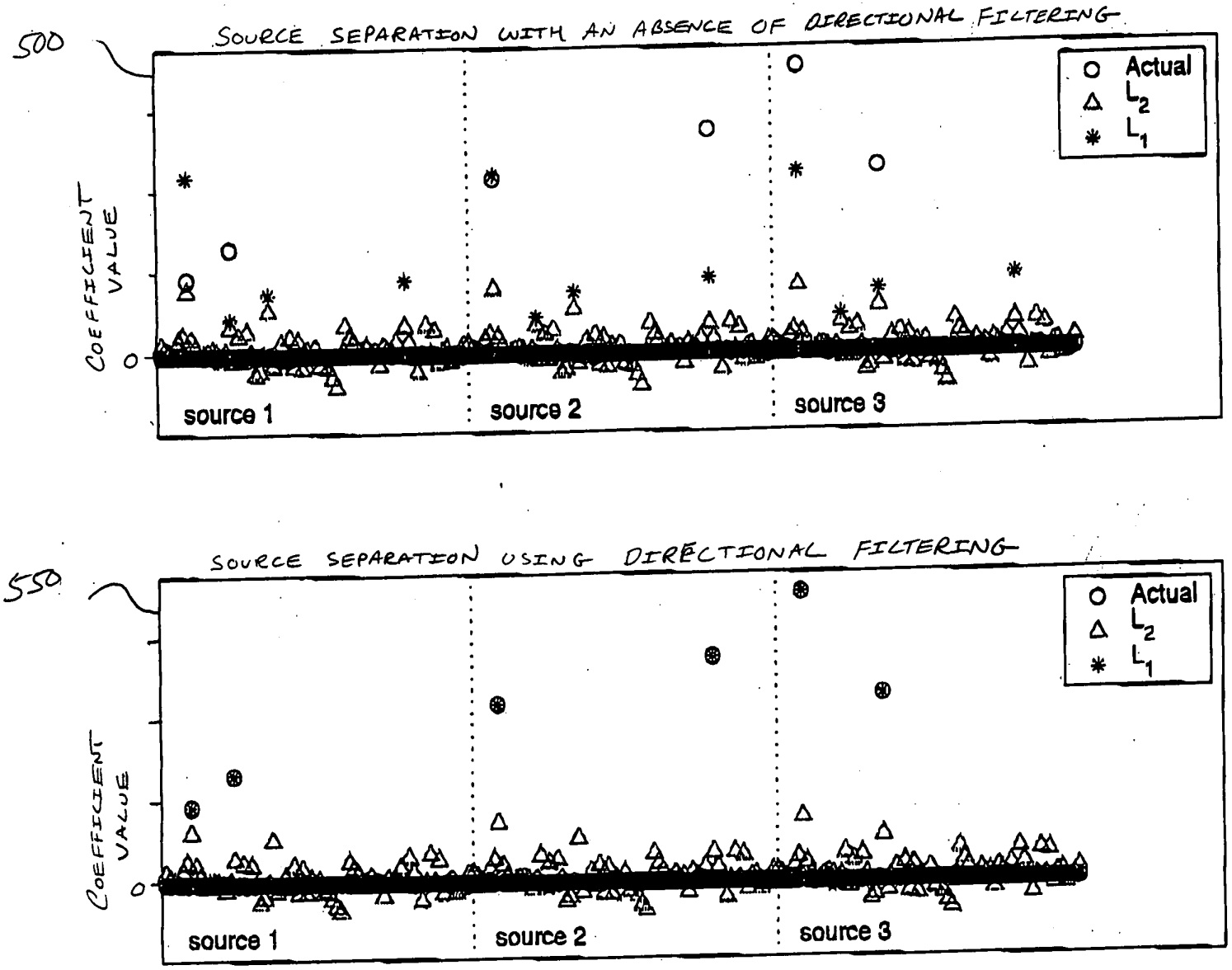
500
SOURCE SEPARATION WITH AN ABSENCE OF DIRECTIONAL FILTERING
COEFFICIENT VALUE
0
Actual
L_2
L_1
source 1
source 2
source 3
550
SOURCE SEPARATION USING DIRECTIONAL FILTERING
COEFFICIENT VALUE
0
Actual
L_2
L_1
source 1
source 2
source 3

FIG. 5

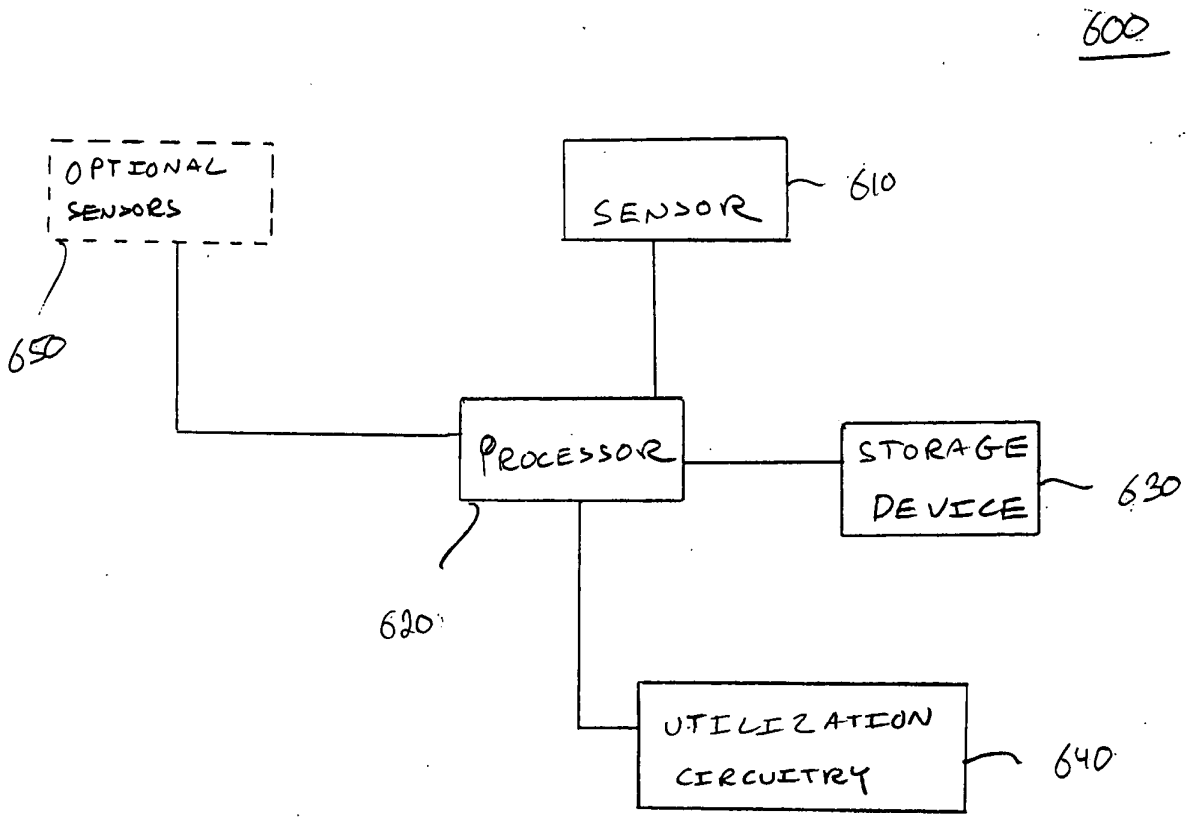
600
OPTIONAL SENSORS
650
SENSOR
610
PROCESSOR
620
STORAGE DEVICE
630
UTILIZATION CIRCUITRY
640

FIG. 6